Valuing Reduced Asthma Morbidity for Policy Decisions

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Key Words: children's health, valuation, air quality, risk perception, asthma

The large and growing population of children with asthma constitutes a population of particular concern for the EPA. The project described in this poster presentation provides econometric estimates of risk-reducing behavior and willingness to pay for reduced asthma morbidity. The valuation of reduction in asthma morbidity is of significant relevance for public policy decisions targeted at children and susceptible populations.

This study models household behavior to minimize a specific health endpoint: morbidity effects of pollution on children with asthma. The project addresses three main questions: 1) what determines households' perceptions of risks to an asthmatic child, 2) what averting and/or mitigating actions do households take, and 3) what is the estimated willingness to pay for reduction in asthma morbidity. We use information gathered through a series of surveys to estimate the household's willingness to pay for either a marginal or non-marginal reduction in pollution levels.

This project is a unique partnership between teams of epidemiologists and economists. The study population includes children ages 6-10 years with clinically diagnosed asthma, residing in a section of Fresno County, California who are participants of the Fresno Asthmatic Children's Environment Study (FACES). FACES is a five-year epidemiological study of households with asthmatic children, funded by the California Air Resources Board. The primary focus of FACES is to evaluate the impact of environmental factors such as air pollution on the natural history of childhood asthma. The main focus of the project described in the poster presentation is household behavior and the role of household characteristics in behavioral responses to risk.

This project will provide insight into multiple aspects of policy directed at improving children's health. By estimating the demand for risk averting and mitigating actions, this project will help design policies to induce risk-minimizing behavior in households with asthmatic children. The study of risk perception will provide information on the correlation between subjective risk and objective risk, which can be utilized to refine EPA's outreach and education programs. Finally, the estimation of willingness to pay for reduction in asthma morbidity will contribute to EPA's cost-benefit analyses of air quality standards.